```
=> s weak cation exchange
  29 FILES SEARCHED...
L1          506 WEAK CATION EXCHANGE

=> s (rhamnose or xylose or arabinose) and l1
  36 FILES SEARCHED...
L2            0 (RHAMNOSE OR XYLOSE OR ARABINOSE) AND L1

=> d kwic 1 l1

L1   ANSWER 1 OF 506  AGRICOLA
AB   . . . by a gas chromatographic (GC) method using a dimethylsilicone
     capillary column and a high-performance liquid chromatographic (HPLC)
     method using a weak cation exchange column.
     Hygrine content in E. coca leaves was determined as 0.12% by GC and 0.07%
     by HPLC, whereas cuscohygrine content. . .


=> s sugar and l1
L3           12 SUGAR AND L1

=> s monosaccharide and l1
L4            0 MONOSACCHARIDE AND L1

=> d kwic 1-12 l3

L3   ANSWER 1 OF 12  ANABSTR  COPYRIGHT  2003 RSC
TI   Improved quantitative ion chromatography of industrial sugars:
     removal of interfering amino acids.
AB   Ion chromatography with integrated pulsed amperometric detection (IC-IPAD)
     was used to analyse beet syrup; juice and molasses for sugars
     and to investigate the effects of amino acids. The separations were
     performed using 25 .mu.l injection sizes on an analytical. . . Data
     processing utilized Dionex PeakNet 4.30 chromatography software. Attempts
     to remove the interference caused by amino-acids involved the use of
     weak cation exchange resin, solid phase
     reversed phase cartridges and solid phase cation exchange filters (details
     given). Results are discussed with reference to the accuracy of
     determination of sugars in such samples.
IT   Matrix:
       molasses
     (detmn. of carbohydrates in sugar beet, by ion chromatography,
     spectral interferences in)
         sugar beet
     (detmn. of carbohydrates in juice and syrup from, by ion chromatography,
     spectral interferences in)
     Concepts:
       chromatography, ion
     (spectral interferences in, amino-acids as, in detmn. of carbohydrates in
     sugar beet juice, molasses and syrup)

L3   ANSWER 2 OF 12  CABA COPYRIGHT 2003 CABI
AB   At Twin Falls beet sugar factory, a system for softening thin
     juice was developed in-house and installed for the 1984/85 campaign. It is
     a weak cation-exchange resin system,
     comprising 3 cells, 2 of which are in use at any one time, while the third
     is being. . . of the system was achieved: to produce molasses which did
     not require softening before being sent to a "chromato-separator" for
     sugar recovery. Other benefits were lower energy consumption and
     the avoidance of scaling in evaporators and thick juice filters; however,
     evaporators. . .
```

L3 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2003 ACS
TI **Sugar** beet juice purification process
AB A process for purifying the raw juice (diffusion juice) obtained from **sugar** beets replaces the traditional liming and carbonation purifn. methods with ion exchange softening and chromatog. sepn. Thus, raw juice was filtered to remove residual suspended solids, passed through a **weak cation-exchange** softener (Dowex MWC-1 in K form) operated at 80.degree., thickened to 67% solids, and chromatog. fractionated using a gel (Lewatit MDS 1368) to give highly pure **sugar**.
ST **sugar** beet purifn ion exchange; cation exchange softener beet **sugar**
IT Cation exchangers
(in process for **sugar** beet juice purifn.)
IT Chromatography, column and liquid
(ion-exchange, **sugar** beet juice purifn. process)
IT Beet
(**sugar**, **sugar** beet juice purifn. process)
IT 99628-18-9, Dowex MWC-1 131016-12-1, Lewatit MDS 1368 169799-07-9, Dowex CM 16
RL: TEM (Technical or engineered material use); USES (Uses)
(in process for **sugar** beet juice purifn.)
IT 57-50-1P, Sucrose, preparation
RL: PUR (Purification or recovery); PREP (Preparation)
(**sugar** beet juice purifn. process)

L3 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2003 ACS
AB . . . of more than 90% were achieved in 12 wk of bioleaching in column tests using 500 g charges of ore. **Sugar** utilization by the microorganisms and formation of org. acid metabolites were monitored by high performance liq. chromatog. Two methods were evaluated to recover manganese from the **sugar**-depleted bioleaching medium: (1) adsorption onto **weak cation exchange** resin, followed by stripping and pptn. techniques, and (2) direct pptn. of the manganese as MnCO3 using ammonium carbonate. Both. . .

L3 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2003 ACS
AB A **weak cation exchange** system for the softening of **sugar** beet thin juice on a downflow basis using 3 cells is described. Because the softener uses a **weak cation exchange** resin in the H form, special operating conditions had to be imposed on the system to prevent inversion of the. . . sliced dropped significantly. Evaporator boilouts were eliminated, and scaling of thick juice filters no longer occurred. Pan vapors improved, increasing **sugar** end capacity and allowing the use of lower vapors. The molasses produced was of sufficient quality to process in the. . .
ST **sugar** beet juice softening cation exchange

L3 ANSWER 6 OF 12 CAPLUS COPYRIGHT 2003 ACS
TI Refining of cane **sugar** juices and apparatus for deionization
AB In the title process, **sugar** juice is firstly passed through a strong anion-exchange resin tower, and then introduced to a mixed-bed tower of strong anion- and **weak cation-exchange** resins for good decolorization. The strong anion-exchange resin of the second tower can be recycled to the first tower for reuse. This process showed better decolorization of **sugar** as compared to conventional strong anion-**weak cation-exchange** resin sequence.
ST cane **sugar** refining exchanger tower; mixed bed tower exchanger

refining
IT Anion exchangers
(strong, for decolorization of **sugar** juice, improved tower sequence for)
IT Cation exchangers
(weak, for decolorization of **sugar** juice, improved tower sequence of)

L3 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2003 ACS
AB The softening or deliming of thin **sugar** beet juice with a **weak cation exchange** system, using a **weak cation exchange** resin in the H form, is discussed. The weak cation exchanter system has a high resin capacity, a small installation,. . .
ST **sugar** beet juice softening cation exchange
IT 57-50-1, Beet, **sugar**, uses and miscellaneous
RL: USES (Uses)
(thin juice from, softening of, by **weak cation exchange**)

L3 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2003 ACS
TI Determination of a diagnostic indicator of a blood **sugar** condition, and a liquid chromatographic microcolumn
AB A method to det. the percent Hb A1a-c relative to total Hb as an indicator of blood **sugar** levels is described using an ion-exchange liq. microchromatog. column. The column bed consists of a **weak cation-exchange**-type methacrylate-divinylbenzene copolymer of 200-400 mesh (Amberlite GG/50, Type II). The resin is equilibrated to pH 6.8 at 22.5.degree. using a. . .
ST cation exchange chromatog Hb; Hb detn erythrocyte blood **sugar**; diabetes diagnosis Hb erythrocyte

L3 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2003 ACS
TI Determination of a diagnostic indicator of a blood **sugar** condition, and a liquid chromatographic microcolumn
AB . . . to det. the percent of HbA1a-c relative to the total Hb content of blood samples as an indicator of blood **sugar** levels is described, using a CM-cellulose ion-exchange liq. microchromatog. column. The column bed consists of **weak cation-exchange**-type cellulose particles that are stabilized by crosslinking, contain neg. charged carboxymethyl groups, and has a size <400 mesh. The cellulose. . .
ST Hb detn erythrocyte blood **sugar**; cation exchange chromatog Hb; diabetes diagnosis Hb erythrocyte

L3 ANSWER 10 OF 12 CAPLUS COPYRIGHT 2003 ACS
TI Determination of a diagnostic indicator of a blood **sugar** condition, and a liquid chromatographic microcolumn
AB A method to det. the percent HbA1a-c relative to the total Hb content as an indicator of blood **sugar** levels is described, using an improved CM-cellulose ion-exchange liq. microchromatog. column. The column is packed with a **weak cation-exchange** cellulose (Whatman CM-52) stabilized by crosslinking and contg. neg. charged carboxymethyl groups, with <400 mesh. The cellulose is equilibrated to. . .
ST Hb detn erythrocyte blood **sugar**; cation exchange chromatog Hb; diabetes diagnosis Hb erythrocyte

L3 ANSWER 11 OF 12 CAPLUS COPYRIGHT 2003 ACS
TI Ion-exchange purification of industrial **sugar** solutions
AB Improved purification of partially refined com. **sugar** solns. is

obtained by passage of the soln. through 2 strong anion-exchange resins and 1 **weak cation-exchange** resin. Thus, 70 1. **sugar** soln. at 80.degree. is passed in sequence through columns contg. 700 ml. spongy, strong anion-exchange resin in the SO4 form. . . of a normal porosity, high-capacity, strong anion-exchange resin in the CO3 form (column 2), and 1.2 1. of a very **weak cation-exchange** resin in the H form (column 3), resp. The final eluate, pH 5-5.5, is neutralized by addn. of small amts.. . . with water until the viscosity of the eluate is <0.5.degree. Brix. The combined solns. can be evapd. to give pure **sugar**, without inversion products. Column 1 is regenerated with the amt. of 2-3N H2SO4 required to regenerate column 3. This acidic. . .

IT **Sugar** manufacture
(clarification or juice purification, by ion exchange)

L3 ANSWER 12 OF 12 PROMT COPYRIGHT 2003 Gale Group

TX In . . . salt concentrations (HIC pool) before washing the column with water and then with NaOH. We subjected the HIC pool to **weak cation-exchange** chromatography, then concentrated the ion-exchange pool and exchanged the buffer as for the Cu-process. We . . . act synergistically to break down crystalline cellulose fibers to glucose (15-17; Figure 4). C1 enzymes cleave crystalline cellulose at nonreducing **sugar** ends, resulting in swelling of the fibrils and penetration of enzymes to the interior. Cx enzymes consist of endogluconases and exogluconases that cleave the amorphous regions (randomly and from the nonreducing **sugar** ends, respectively) and eventually break down the polymer to the disaccharide, cellobiose. Cellobiase, a (beta)-glucosidase, further breaks down cellobiose to. . . These methods measure either reducing **sugars** in the polymer or the glucose end-product specifically. the sensitivity of these methods can be measured in milligrams reducing groups. . . cellulose such as carboxymethyl or hydroxyethyl cellulose. The viscometric methods are several orders of magnitude more sensitive than the reducing **sugar** assays -- even a single clip in the polymer chain can cause a dramatic decrease in polymer viscosity. However, the. . . We deduced a lack of cellulase activity in E. coli by insensitive reducing -**sugar** and filter paper dye assays. Our data, on the other hand, demonstrated a finite cellulose-cleaving activity in E. coli (22).. . . reference Trichoderma reesei cellulase was so low (parts per million) that it would not have been detected by the common reducing-**sugar** assays, and it would not have sustained the growth of celluloytic microorganisms.

=> d bib 11 l3

L3 ANSWER 11 OF 12 CAPLUS COPYRIGHT 2003 ACS
AN 1965:432715 CAPLUS
DN 63:32715
OREF 63:5884f-h
TI Ion-exchange purification of industrial **sugar** solutions
PA Sugar Chemical Co. Etablissement
SO 5 pp.
DT Patent
LA Unavailable
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 1386961		19650122	FR	
	BE 646422			BE	

PRAI AT 19630410

=> FIL STNGUIDE
COST IN U.S. DOLLARS SINCE FILE ENTRY TOTAL SESSION
FULL ESTIMATED COST 116.90 117.32

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) SINCE FILE ENTRY TOTAL SESSION
CA SUBSCRIBER PRICE -5.86 -5.86

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AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Mar 7, 2003 (20030307/UP).

=> d bib abs kwic 1-12 l3
YOU HAVE REQUESTED DATA FROM FILE 'ANABSTR, CABA, CAPLUS, PROMT' - CONTINUE? (Y)/N:y

L3 ANSWER 1 OF 12 ANABSTR COPYRIGHT 2003 RSC
AN 61(11):H293 ANABSTR
TI Improved quantitative ion chromatography of industrial **sugars**: removal of interfering amino acids.
AU Eggleston, G. (Southern Regional Research Center, New Orleans, LA 70179, USA)
SO Food Chem. (1999) 65(4), 483-491
CODEN: FOCHDJ ISSN: 0308-8146
DT Journal
LA English
AB Ion chromatography with integrated pulsed amperometric detection (IC-IPAD) was used to analyse beet syrup; juice and molasses for **sugars** and to investigate the effects of amino acids. The separations were performed using 25 .mu.l injection sizes on an analytical column (25 cm .times. 4 mm i.d) protected by a Dionex CarboPac PA-1 guard column (2.5 cm .times. 4 mm i.d.) with gradient elution (1 ml/min) from 16mM-NaOH (0-2 min), to 16-160mM (2-35 min), 200mM (35.1-40 min), 200-16mM (40-49 min). The Dionex PED-2 detector was equipped with a Au working and Ag/AgCl electrodes (operating conditions given). Data processing utilized Dionex PeakNet 4.30 chromatography software. Attempts to remove the interference caused by amino-acids involved the use of **weak cation exchange** resin, solid phase reversed phase cartridges and solid phase cation exchange filters (details given). Results are discussed with reference to the accuracy of determination of **sugars** in such samples.
TI Improved quantitative ion chromatography of industrial **sugars**: removal of interfering amino acids.
AB Ion chromatography with integrated pulsed amperometric detection (IC-IPAD) was used to analyse beet syrup; juice and molasses for **sugars** and to investigate the effects of amino acids. The separations were performed using 25 .mu.l injection sizes on an analytical. . . Data processing utilized Dionex PeakNet 4.30 chromatography software. Attempts to remove the interference caused by amino-acids involved the use of **weak cation exchange** resin, solid phase reversed phase cartridges and solid phase cation exchange filters (details given). Results are discussed with reference to the accuracy of

determination of **sugars** in such samples.
IT Matrix:
molasses
(detmn. of carbohydrates in **sugar** beet, by ion chromatography, spectral interferences in)
sugar beet
(detmn. of carbohydrates in juice and syrup from, by ion chromatography, spectral interferences in)
Concepts:
chromatography, ion
(spectral interferences in, amino-acids as, in detmn. of carbohydrates in **sugar** beet juice, molasses and syrup)

L3 ANSWER 2 OF 12 CABA COPYRIGHT 2003 CABI
AN 90:126380 CABA
DN 900399719
TI Weak cation softening of thin juice
AU Henscheid, T. H.; Velasquez, L.; Meacham, D.
CS The Amalgamated Sugar Company, Twin Falls, Idaho, USA.
SO International Sugar Journal, (1990) Vol. 92, No. 1102, pp. 206-209. 2 ref.
ISSN: 0020-8841
DT Journal
LA English
AB At Twin Falls beet **sugar** factory, a system for softening thin juice was developed in-house and installed for the 1984/85 campaign. It is a **weak cation-exchange** resin system, comprising 3 cells, 2 of which are in use at any one time, while the third is being regenerated or on standby. To avoid bacterial infection, the juice must be at >80 deg C. To prevent inversion, flow rates must be very high (40-100 bed-volumes/h), and, during the first 60 min of each cycle, juice leaving the system must be neutralized immediately, as its pH is low. Cells are regenerated at a time such that the average CaO content of thin juice is <0.006 g/100 g dissolved solids. The resin is regenerated with H2SO4 (concentration <0.05%) cocurrent to the juice flow; spent regenerant is added at a controlled rate to the diffuser supply tank. The main object of the system was achieved: to produce molasses which did not require softening before being sent to a "chromato-separator" for **sugar** recovery. Other benefits were lower energy consumption and the avoidance of scaling in evaporators and thick juice filters; however, evaporators needed to be coated to prevent corrosion.
AB At Twin Falls beet **sugar** factory, a system for softening thin juice was developed in-house and installed for the 1984/85 campaign. It is a **weak cation-exchange** resin system, comprising 3 cells, 2 of which are in use at any one time, while the third is being. . . of the system was achieved: to produce molasses which did not require softening before being sent to a "chromato-separator" for **sugar** recovery. Other benefits were lower energy consumption and the avoidance of scaling in evaporators and thick juice filters; however, evaporators. . .

L3 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2003 ACS
AN 1995:863562 CAPLUS
DN 123:290249
TI **Sugar** beet juice purification process
IN Kearney, Michael M.; Kochergin, Vadim; Peterson, Kenneth R.; Velasquez, Larry
PA Amalgamated Sugar Co., USA
SO PCT Int. Appl., 20 pp.
CODEN: PIXXD2
DT Patent
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9516794	A1	19950622	WO 1994-US14011	19941205
	W: AU, CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5466294	A	19951114	US 1993-168065	19931214
	CA 2177706	AA	19950622	CA 1994-2177706	19941205
	AU 9512660	A1	19950703	AU 1995-12660	19941205
	AU 681224	B2	19970821		
	EP 739424	A1	19961030	EP 1995-903685	19941205
	R: AT, BE, DE, FR, GB, NL				
	US 36361	E	19991102	US 1997-803627	19970221
PRAI	US 1993-168065		19931214		
	WO 1994-US14011		19941205		

AB A process for purifying the raw juice (diffusion juice) obtained from **sugar** beets replaces the traditional liming and carbonation purifn. methods with ion exchange softening and chromatog. sepn. Thus, raw juice was filtered to remove residual suspended solids, passed through a **weak cation-exchange** softener (Dowex MWC-1 in K form) operated at 80.degree., thickened to 67% solids, and chromatog. fractionated using a gel (Lewatit MDS 1368) to give highly pure **sugar**.

TI **Sugar** beet juice purification process

AB A process for purifying the raw juice (diffusion juice) obtained from **sugar** beets replaces the traditional liming and carbonation purifn. methods with ion exchange softening and chromatog. sepn. Thus, raw juice was filtered to remove residual suspended solids, passed through a **weak cation-exchange** softener (Dowex MWC-1 in K form) operated at 80.degree., thickened to 67% solids, and chromatog. fractionated using a gel (Lewatit MDS 1368) to give highly pure **sugar**.

ST **sugar** beet purifn ion exchange; cation exchange softener beet **sugar**

IT Cation exchangers
(in process for **sugar** beet juice purifn.)

IT Chromatography, column and liquid
(ion-exchange, **sugar** beet juice purifn. process)

IT Beet
(**sugar**, **sugar** beet juice purifn. process)

IT 99628-18-9, Dowex MWC-1 131016-12-1, Lewatit MDS 1368 169799-07-9, Dowex CM 16
RL: TEM (Technical or engineered material use); USES (Uses)
(in process for **sugar** beet juice purifn.)

IT 57-50-1P, Sucrose, preparation
RL: PUR (Purification or recovery); PREP (Preparation)
(**sugar** beet juice purifn. process)

L3 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2003 ACS

AN 1994:660242 CAPLUS

DN 121:260242

TI Microbial leaching of manganese oxide ore with recovery of manganese from leach solutions

AU Noble, E. G.; Lampshire, D. L.; McIntosh, S. N.; Baglin, E. G.

CS Reno Res. Cent., U. S. Bureau Mines, Reno, NV, 89512-2295, USA

SO Hydrometall. Proc. Milton E. Wadsworth Int. Symp., 4th (1993), 661-74. Editor(s): Hiskey, J. Brent; Warren, Garry W. Publisher: Soc. Min., Metall. Explor., Littleton, Colo.
CODEN: 60RJAK

DT Conference

LA English

AB The U. S Bureau of Mines investigated column bioleaching as a means of recovering manganese from a domestic low-grade oxide ore. Manganese was solubilized from the ore using indigenous heterotrophic microorganisms and molasses as the nutrient source. The effects of medium flow rate, molasses concn., and frequency of medium replacement on the rate of manganese extn. were examd. Results showed that flow rates between 0.4 and 8.1 L/min/m2 had little impact on manganese extn., while an increase in the total amt. of molasses applied during leaching directly affected the extent and rate of manganese extn. Manganese extns. of more than 90% were achieved in 12 wk of bioleaching in column tests using 500 g charges of ore. **Sugar** utilization by the microorganisms and formation of org. acid metabolites were monitored by high performance liq. chromatog. Two methods were evaluated to recover manganese from the **sugar**-depleted bioleaching medium: (1) adsorption onto **weak cation exchange** resin, followed by stripping and pptn. techniques, and (2) direct pptn. of the manganese as MnCO3 using ammonium carbonate. Both recovery methods removed at least 95% of the solubilized manganese from the medium as a carbonate salt. The stripped molasses medium was replenished with fresh molasses and recycled back through the bioleach column, successfully leaching more manganese.

AB The U. S Bureau of Mines investigated column bioleaching as a means of recovering manganese from a domestic low-grade oxide ore. Manganese was solubilized from the ore using indigenous heterotrophic microorganisms and molasses as the nutrient source. The effects of medium flow rate, molasses concn., and frequency of medium replacement on the rate of manganese extn. were examd. Results showed that flow rates between 0.4 and 8.1 L/min/m2 had little impact on manganese extn., while an increase in the total amt. of molasses applied during leaching directly affected the extent and rate of manganese extn. Manganese extns. of more than 90% were achieved in 12 wk of bioleaching in column tests using 500 g charges of ore. **Sugar** utilization by the microorganisms and formation of org. acid metabolites were monitored by high performance liq. chromatog. Two methods were evaluated to recover manganese from the **sugar**-depleted bioleaching medium: (1) adsorption onto **weak cation exchange** resin, followed by stripping and pptn. techniques, and (2) direct pptn. of the manganese as MnCO3 using ammonium carbonate. Both recovery methods removed at least 95% of the solubilized manganese from the medium as a carbonate salt. The stripped molasses medium was replenished with fresh molasses and recycled back through the bioleach column, successfully leaching more manganese.

L3 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2003 ACS
AN 1991:209466 CAPLUS
DN 114:209466
TI Weak cation softening of thin juice
AU Henscheid, T. H.; Velasquez, L.; Meacham, D.
CS Amalgamated Sugar Co., Twin Falls, ID, USA
SO International Sugar Journal (1990), 92(1102), 206-9
CODEN: ISUJA3; ISSN: 0020-8841
DT Journal
LA English
AB A **weak cation exchange** system for the softening of **sugar** beet thin juice on a downflow basis using 3 cells is described. Because the softener uses a **weak cation exchange** resin in the H form, special operating conditions had to be imposed on the system to prevent inversion of the sucrose, i.e. flow rates were kept very high (40-100 bed vols./h) at temps. slightly > 80.degree.. The factories were able to slice more beets because of the clean evaporators, and energy usage per ton of beets sliced dropped significantly. Evaporator boilouts were eliminated, and scaling of thick juice filters no longer occurred. Pan vapors improved,

increasing **sugar** end capacity and allowing the use of lower vapors. The molasses produced was of sufficient quality to process in the separator without any further softening.

AB A **weak cation exchange** system for the softening of **sugar** beet thin juice on a downflow basis using 3 cells is described. Because the softener uses a **weak cation exchange** resin in the H form, special operating conditions had to be imposed on the system to prevent inversion of the sucrose, i.e. flow rates were kept very high (40-100 bed vols./h) at temps. slightly > 80.degree.. The factories were able to slice more beets because of the clean evaporators, and energy usage per ton of beets sliced dropped significantly. Evaporator boilouts were eliminated, and scaling of thick juice filters no longer occurred. Pan vapors improved, increasing **sugar** end capacity and allowing the use of lower vapors. The molasses produced was of sufficient quality to process in the separator without any further softening.

ST **sugar** beet juice softening cation exchange

L3 ANSWER 6 OF 12 CAPLUS COPYRIGHT 2003 ACS
AN 1991:166683 CAPLUS
DN 114:166683
TI Refining of cane **sugar** juices and apparatus for deionization
IN Koto, Nobuyoshi; Omagari, Takaaki
PA Japan Organo Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02295499	A2	19901206	JP 1989-115747	19890509
	JP 2785833	B2	19980813		
PRAI	JP 1989-115747		19890509		

AB In the title process, **sugar** juice is firstly passed through a strong anion-exchange resin tower, and then introduced to a mixed-bed tower of strong anion- and **weak cation-exchange** resins for good decolorization. The strong anion-exchange resin of the second tower can be recycled to the first tower for reuse. This process showed better decolorization of **sugar** as compared to conventional strong anion-**weak cation-exchange** resin sequence.

TI Refining of cane **sugar** juices and apparatus for deionization

AB In the title process, **sugar** juice is firstly passed through a strong anion-exchange resin tower, and then introduced to a mixed-bed tower of strong anion- and **weak cation-exchange** resins for good decolorization. The strong anion-exchange resin of the second tower can be recycled to the first tower for reuse. This process showed better decolorization of **sugar** as compared to conventional strong anion-**weak cation-exchange** resin sequence.

ST cane **sugar** refining exchanger tower; mixed bed tower exchanger refining

IT Anion exchangers
(strong, for decolorization of **sugar** juice, improved tower sequence for)

IT Cation exchangers
(weak, for decolorization of **sugar** juice, improved tower sequence of)

L3 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2003 ACS

AN 1991:166675 CAPLUS
DN 114:166675
TI Five years' experience with weak cation softening on thin juice
AU Henscheid, Tom; Velasquez, Larry; Meacham, Dave
CS USA
SO Publication of Technical Papers and Proceedings of the Annual Meeting of Sugar Industry Technologists (1990), 49th, 139-50
CODEN: PTPPAC; ISSN: 0099-9032
DT Journal
LA English
AB The softening or deliming of thin **sugar** beet juice with a **weak cation exchange** system, using a **weak cation exchange** resin in the H form, is discussed. The weak cation exchanter system has a high resin capacity, a small installation, min. diln., waste used as a pressing aid, excellent softening, and requires special operating conditions. The system works very well and produces a thin juice with an av. of < 0.006 g CaO/100 RDS when the cells are exhausted to the point of leakage, and this can be decreased to zero by switching cells at an earlier point.
AB The softening or deliming of thin **sugar** beet juice with a **weak cation exchange** system, using a **weak cation exchange** resin in the H form, is discussed. The weak cation exchanter system has a high resin capacity, a small installation, min. diln., waste used as a pressing aid, excellent softening, and requires special operating conditions. The system works very well and produces a thin juice with an av. of < 0.006 g CaO/100 RDS when the cells are exhausted to the point of leakage, and this can be decreased to zero by switching cells at an earlier point.
ST **sugar** beet juice softening cation exchange
IT 57-50-1, Beet, **sugar**, uses and miscellaneous
RL: USES (Uses)
(thin juice from, softening of, by **weak cation exchange**)

L3 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2003 ACS
AN 1979:199875 CAPLUS
DN 90:199875
TI Determination of a diagnostic indicator of a blood **sugar** condition, and a liquid chromatographic microcolumn
IN Acuff, Kenneth J.
PA Isolab, Inc., USA
SO U.S., 8 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4142858	A	19790306	US 1977-856725	19771202
	DE 2851827	A1	19790613	DE 1978-2851827	19781130
	DE 2851827	C2	19830616		
	GB 2012068	A	19790718	GB 1978-46811	19781201
	GB 2012068	B2	19820217		
	GB 2011801	A	19790718	GB 1978-46813	19781201
	GB 2011801	B2	19820113		
	JP 54099496	A2	19790806	JP 1978-148000	19781201
	JP 62011308	B4	19870311		
	CH 648128	A	19850228	CH 1978-12325	19781201
PRAI	US 1977-856721		19771202		
	US 1977-856722		19771202		
	US 1977-856723		19771202		

US 1977-856724 19771202
US 1977-856725 19771202
US 1978-932647 19780810

AB A method to det. the percent Hb A1a-c relative to total Hb as an indicator of blood **sugar** levels is described using an ion-exchange liq. microchromatog. column. The column bed consists of a **weak cation-exchange**-type methacrylate-divinylbenzene copolymer of 200-400 mesh (Amberlite GG/50, Type II). The resin is equilibrated to pH 6.8 at 22.5.degree. using a bis-tris-cyanide soln. consisting of 6.28 g (HOCH2CH)2NC(CH2OH)3 (0.03M), 0.10 g KCN (0.01%), and 0.10 g NaN3 (0.01%) as preservative. A whole blood sample is lysed and an erythrocyte hemolyzate prepd. The hemolyzate is introduced into the end of the column bed eluted with the bis-tris-cyanide soln., and the eluate measured spectrometrically. The remaining fractions are sequentially eluted and measured spectrometrically. The percentage of the amt. of the 1st eluate relative to that of the sum of the 1st and remaining eluates serves as the diagnostic indicator. The technique should prove useful in the diagnosis of diabetes.

TI Determination of a diagnostic indicator of a blood **sugar** condition, and a liquid chromatographic microcolumn

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ST cation exchange chromatog Hb; Hb detn erythrocyte blood **sugar**; diabetes diagnosis Hb erythrocyte

L3 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2003 ACS
AN 1979:182791 CAPLUS
DN 90:182791
TI Determination of a diagnostic indicator of a blood **sugar** condition, and a liquid chromatographic microcolumn
IN Acuff, Kenneth J.
PA Isolab, Inc., USA
SO U.S., 8 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4142857	A	19790306	US 1977-856724	19771202
	DE 2851827	A1	19790613	DE 1978-2851827	19781130
	DE 2851827	C2	19830616		
	GB 2012068	A	19790718	GB 1978-46811	19781201
	GB 2012068	B2	19820217		
	GB 2011801	A	19790718	GB 1978-46813	19781201
	GB 2011801	B2	19820113		
	JP 54099496	A2	19790806	JP 1978-148000	19781201
	JP 62011308	B4	19870311		

	CH 648128	A	19850228	CH 1978-12325	19781201
PRAI	US 1977-856721		19771202		
	US 1977-856722		19771202		
	US 1977-856723		19771202		
	US 1977-856724		19771202		
	US 1977-856725		19771202		
	US 1978-932647		19780810		

AB A method to det. the percent of HbA1a-c relative to the total Hb content of blood samples as an indicator of blood **sugar** levels is described, using a CM-cellulose ion-exchange liq. microchromatog. column. The column bed consists of **weak cation-exchange**-type cellulose particles that are stabilized by crosslinking, contain neg. charged carboxymethyl groups, and has a size <400 mesh. The cellulose particles are equilibrated to pH 6.1 at 22.5.degree. using a bis-tris-cyanide soln. consisting of 6.28 g (HOCH2CH2)2NC(CH2OH)3 (0.03M), 0.10 g KCN (0.01%), and 0.10 g NaN3 (0.01%) as preservative. A whole blood sample is lysed and an erythrocyte hemolyzate prepd. The hemolyzate is introduced into the end of the column bed, eluted with bis-tris-cyanide soln., and the eluate measured spectrometrically. Successive addns. of buffers are made to the column to desorb the remaining Hb fractions, and these eluates are measured spectrometrically. The percentage of the amt. of the 1st eluate relative to the sum of the amts. of the 1st and remaining eluates serves as the diagnostic indicator. The method is useful in diabetes diagnosis.

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ST Hb detn erythrocyte blood **sugar**; cation exchange chromatog Hb; diabetes diagnosis Hb erythrocyte

L3 ANSWER 10 OF 12 CAPLUS COPYRIGHT 2003 ACS
AN 1979:164341 CAPLUS
DN 90:164341
TI Determination of a diagnostic indicator of a blood **sugar** condition, and a liquid chromatographic microcolumn
IN Acuff, Kenneth J.
PA Isolab, Inc., USA
SO U.S., 8 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4142856	A	19790306	US 1977-856723	19771202

	DE 2851827	A1	19790613	DE 1978-2851827	19781130
	DE 2851827	C2	19830616		
	GB 2012068	A	19790718	GB 1978-46811	19781201
	GB 2012068	B2	19820217		
	GB 2011801	A	19790718	GB 1978-46813	19781201
	GB 2011801	B2	19820113		
	JP 54099496	A2	19790806	JP 1978-148000	19781201
	JP 62011308	B4	19870311		
	CH 648128	A	19850228	CH 1978-12325	19781201
PRAI	US 1977-856721		19771202		
	US 1977-856722		19771202		
	US 1977-856723		19771202		
	US 1977-856724		19771202		
	US 1977-856725		19771202		
	US 1978-932647		19780810		

AB A method to det. the percent HbA1a-c relative to the total Hb content as an indicator of blood **sugar** levels is described, using an improved CM-cellulose ion-exchange liq. microchromatog. column. The column is packed with a **weak cation-exchange** cellulose (Whatman CM-52) stabilized by crosslinking and contg. neg. charged carboxymethyl groups, with <400 mesh. The cellulose is equilibrated to pH 6.8 at 22.5.degree. using a soln. of 1.38 g NaH2PO4.H2O (0.01M), 0.10 g KCN (0.01%), and 0.10 g NaN3 (0.01%). A whole blood sample is lysed and prepd. as an erythrocyte hemolyzate. The hemolyzate is introduced into the end of the column bed, eluted with the phosphate-CN- soln., and the eluate measured spectrometrically. Successive buffer addns. are made to the column to desorb the remaining Hb fractions; and these eluates are measured spectrometrically. The percentage of the 1st eluate relative to the sum of the 1st and remaining eluates provides the diagnostic indicator which should be useful in the diagnosis of diabetes.

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ST Hb detn erythrocyte blood **sugar**; cation exchange chromatog Hb; diabetes diagnosis Hb erythrocyte

L3 ANSWER 11 OF 12 CAPLUS COPYRIGHT 2003 ACS
AN 1965:432715 CAPLUS
DN 63:32715
OREF 63:5884f-h
TI Ion-exchange purification of industrial **sugar** solutions
PA Sugar Chemical Co. Etablissement
SO 5 pp.
DT Patent
LA Unavailable

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 1386961		19650122	FR	
	BE 646422			BE	
PRAI	AT		19630410		

AB Improved purification of partially refined com. **sugar** solns. is obtained by passage of the soln. through 2 strong anion-exchange resins and 1 **weak cation-exchange** resin. Thus, 70 1. **sugar** soln. at 80.degree. is passed in sequence through columns contg. 700 ml. spongy, strong anion-exchange resin in the SO4 form (column 1), 3 1. of a normal porosity, high-capacity, strong anion-exchange resin in the CO3 form (column 2), and 1.2 1. of a very **weak cation-exchange** resin in the H form (column 3), resp. The final eluate, pH 5-5.5, is neutralized by addn. of small amts. of elute from column 1 and (or) 2. The resins are washed with water until the viscosity of the eluate is <0.5.degree. Brix. The combined solns. can be evapd. to give pure **sugar**, without inversion products. Column 1 is regenerated with the amt. of 2-3N H2SO4 required to regenerate column 3. This acidic eluate from column 1 is dild. to pH .gtoreq. 3, and is cycled at 80.degree. through column 3 until the pH of the emerging soln. stabilizes at 3.5-4.0. The column is cooled and washed free of salts in the usual manner. Column 2 is regenerated with 40% aq. (NH4)2CO3.

TI Ion-exchange purification of industrial **sugar** solutions

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IT **Sugar** manufacture
(clarification or juice purification, by ion exchange)

L3 ANSWER 12 OF 12 PROMT COPYRIGHT 2003 Gale Group

AN 95:123206 PROMT

TI Cellulose-Cleaving Activity Contaminating E. coli-Produced Recombinant Proteins
Cellulose clearing activities of E.Coli can affect topical gel and protein purification

SO BioPharm, (Mar 1995) pp. 32.
ISSN: 1040-8304.

LA English

WC 3544

FULL TEXT IS AVAILABLE IN THE ALL FORMAT

AB By Zahra Shahrokh, Irina Beylin, Gert Eberlein, Mark Busch, Ling-Ling Kang, Amy Wong, Cheryl Anderson, Diane Blumenthal, and Y. John Wang
Cellulose-cleaving activity in E. coli can compromise the stability of

topical gel formulations and decrease the lifetime of cellulose-containing columns and filters used for protein purification. This article describes the detection and quantitative estimation of a cellulose-cleaving activity in E. coli using sensitive viscometric and HPLC assays. The authors determine that cellulase-like activity should be considered during purification of E. coli -expressed proteins.

The challenge of developing topical protein formulations includes maintaining the stability of a protein drug and the physical characteristics of a vehicle over the course of product shelf life. Compounds typically used for gel protein formulations are cellulose derivatives, carboxyvinyl polymers (Carbopol for example), and polyethylene glycol ether derivatives (1). Hydroxyethylcellulose (HEC) is a nonionic, water-soluble, nonirritating compound that has been used for preparation of semisolid formulations for proteins such as acidic fibroblast growth factor (aFGF) (2), transforming growth factor-(alpha) (TGF-(alpha)) (3), epidermal growth factor (EGF) (5) and transforming growth factor-(beta) (TGF-(beta) (4), platelet-derived growth factor (PDGF) (5), and relaxin (6). It has a particularly useful range of viscosity for application as a topical formulation of fibroblast growth factors that are under clinical investigation for accelerating wound healing. Hydration of the HEC power is followed by gelation, presumably due to hydrogen bonding of the hydroxyethyl groups (three groups per hexose monomer) with water. Predominant determinants of HEC viscosity are polymer concentration, molecular weight, degree of ethylene oxide substitution in the cellulose molecule, and temperature.

TX In . . . salt concentrations (HIC pool) before washing the column with water and then with NaOH. We subjected the HIC pool to **weak cation-exchange** chromatography, then concentrated the ion-exchange pool and exchanged the buffer as for the Cu-process.

We . . . act synergistically to break down crystalline cellulose fibers to glucose (15-17; Figure 4). C1 enzymes cleave crystalline cellulose at nonreducing **sugar** ends, resulting in swelling of the fibrils and penetration of enzymes to the interior. Cx enzymes consist of endogluconases and exogluconases that cleave the amorphous regions (randomly and from the nonreducing **sugar** ends, respectively) and eventually break down the polymer to the disaccharide, cellobiose. Cellobiase, a (beta)-glucosidase, further breaks down cellobiose to. . .

These methods measure either reducing **sugars** in the polymer or the glucose end-product specifically. the sensitivity of these methods can be measured in milligrams reducing groups. . . cellulose such as carboxymethyl or hydroxyethyl cellulose. The viscometric methods are several orders of magnitude more sensitive than the reducing **sugar** assays -- even a single clip in the polymer chain can cause a dramatic decrease in polymer viscosity. However, the. . .

We deduced a lack of cellulase activity in E. coli by insensitive reducing -**sugar** and filter paper dye assays. Our data, on the other hand, demonstrated a finite cellulose-cleaving activity in E. coli (22).. . . reference Trichoderma reesei cellulase was so low (parts per million) that it would not have been detected by the common reducing-**sugar** assays, and it would not have sustained the growth of celluloytic microorganisms.

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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.18	157.90

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-11.72

SESSION WILL BE HELD FOR 60 MINUTES
STN INTERNATIONAL SESSION SUSPENDED AT 15:33:43 ON 26 MAR 2003